

2007 Drinking Water Quality Report



Fort Worth Water Department
Public Education Section
1000 Throckmorton St
Fort Worth Texas 76102

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A Message from the Water Director

This report provides information on the quality of your drinking water in 2007. Almost every water utility in the country is required to provide this information on an annual basis. We hope you take the time to review this.

We realize this report may seem very complex. There are federal and state requirements regarding what information is provided and how it is presented.

The bottom line is your drinking water meets all the federal and state requirements for protecting public health. In fact, the page 2 table shows that the levels of contaminants found in your water don't come close to the highest allowable levels.

The City of Fort Worth Water Department employees recognize their daily responsibility for protecting public health. We take great pride in maintaining the "superior" designation our water system has received from the Texas Commission on Environmental Quality (TCEQ).

Mailing this report to our customers is a federal and state requirement. It can also be found on our Web site. Please visit **www.fortworthgov.org/water**.

If you would like additional copies, call us. Our 24-hour customer service number is 817-392-4477. If you prefer electronic communication, e-mail us at WPE@fortworthgov.org.



S. Frank Crumb

We welcome the opportunity to speak to neighborhood groups and civic organizations about water topics, such as drinking water quality, efficient water use, or ways to keep grease out of the sewer system. Just contact us by phone or e-mail to make the arrangements.



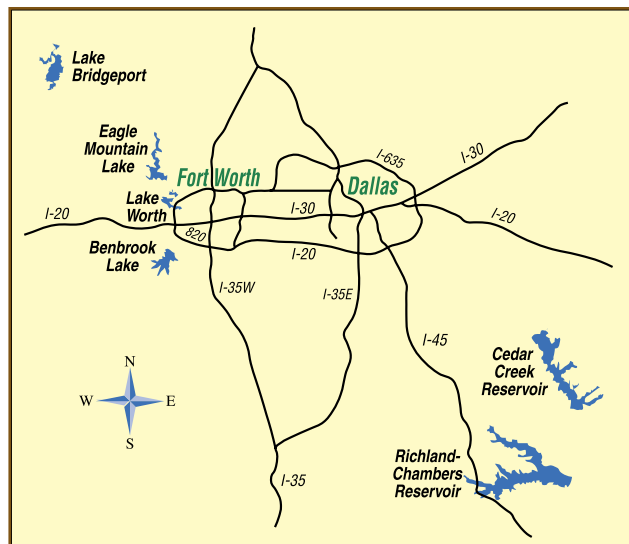
Only Tap Water Delivers®

- ...public health protection
- ...fire protection
- ...support for the economy
- ...the overall quality of life we enjoy

What Are Our Drinking Water Sources?

Fort Worth uses surface water from six lakes – Lake Bridgeport, Eagle Mountain Lake, Lake Worth, Benbrook Lake, Cedar Creek Reservoir and Richland-Chambers Reservoir.

Fort Worth owns Lake Worth. The U.S. Army Corps of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District (TRWD).



Fort Worth Water Department

817-FW-24-HRS (817-392-4477)

Web site: www.fortworthgov.org/water

E-mail: WPE@fortworthgov.org

Administrative Office:

Fort Worth City Hall, Second Floor
1000 Throckmorton St.
817-392-8220

The Water Department is part of the Fort Worth city government. The City Council meets each Tuesday at City Hall, 1000 Throckmorton St.

1st & 2nd Tuesday of month 7 p.m.
All other Tuesdays 10 a.m.

Health Information for Special Populations

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly or immunocompromised persons, such as those undergoing chemotherapy for cancer, those who have undergone organ transplants, those who are undergoing treatment with steroids and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections.

You should seek advice about drinking water from your physician or health care provider.

Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Cryptosporidium, Giardia & Virus Results Provided

2007 testing of lake water did not detect any viruses but did detect low levels of *Cryptosporidium* and *Giardia lamblia*. These are microscopic organisms common in surface water.

Required levels of inactivation

are achieved through disinfection and filtration.

The source is human and animal fecal waste. When ingested, *Cryptosporidium* and *Giardia lamblia* can cause diarrhea, cramps and fever.

No specific drug therapy has

proven effective, but people with healthy immune systems usually recover within two weeks.

Individuals with weak immune systems, however, may be unable to clear the parasite and suffer chronic and debilitating illness.

What's in the Water

Contaminant	Measure	MCL	2007 Level	Range of Detects	MCLG	Common Sources of Substance
Barium ¹	ppm	2	0.058	0.033 to 0.058	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta particles & Photon emitters ²	pCi/L	50	6.6	4.6 to 6.6	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Fluoride	ppm	4	0.66	0.47 to 0.66	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.40	0.18 to 0.40	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.035	0 to 0.035	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Bromate	ppb	10	3.7	0 to 3.7	0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	25.2	6.3 to 25.2	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	51.1	18.3 to 51.1	N/A	By-product of drinking water disinfection
Total Coliforms (including fecal coliform & E. coli)	% of positive samples	Presence in 5% of monthly samples	Presence in 2.5% of monthly samples	0 to 2.5	0	Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.

Turbidity ³	NTU	TT	0.48 Highest single result 99.4% Lowest monthly % of samples ≤ 0.3 NTU	N/A	N/A	Soil runoff
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Contaminant	Measure	MRDL	2007 Level	Range of Detects	MRDLG	Common Sources of Substance
Chloramines	ppm	4	3.5	1.1 to 4.5	4	Water additive used to control microbes

Contaminant	Measure	90th percentile ⁵	# of sites exceeding action level	MCL	MCLG	Common Sources of Substance
Lead ⁴	ppb	2.4	0	Action Level =15	N/A	Corrosion of household plumbing systems; erosion of natural deposits
Copper ⁴	ppm	0.457	0	Action Level =1.3	N/A	

Contaminant	High	Low	Average	MCL	MCLG	Common Sources of Substance
Total Organic Carbon ⁶	1	1	1	TT = % removal	N/A	Naturally occurring

¹ Because Fort Worth historically has had low levels of metals in its water, the Texas Commission on Environmental Quality (TCEQ) requires this monitoring once every six years. The test results shown above are from 2002. The next monitoring will occur in 2008.

² Because Fort Worth historically has had low levels of radionuclides in its water, TCEQ requires this monitoring once every three years. The test results shown above are from 2005. The next monitoring will occur in 2008.

³ Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

⁴ Because Fort Worth historically has had low levels of lead and copper in its water, the TCEQ requires this monitoring once every three years. The test results shown above are from 2005. The next monitoring will occur in 2008.

⁵ 90th percentile value: 90% of the samples were at or below this value. EPA considers the 90th

percentile value the same as an "average" value for other contaminants. Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps.

⁶ Total Organic Carbon is used to determine disinfection by-product precursors. Fort Worth was in compliance with all monitoring and treatment technique requirements for disinfection by-product precursors.

Abbreviations Used in All Tables

Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

MCL - Maximum Contaminant Level; the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG - Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL - Maximum Residual Disinfectant Level; the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG - Maximum Residual Disinfectant Level Goal; the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A - Not Applicable.

NTU - Nephelometric Turbidity Unit; a measure of water turbidity or clarity.

pCi/L - Picocuries per liter; a measure of radioactivity.

ppb - Parts per billion or micrograms per liter (µg/L).

ppm - Parts per million or milligrams per liter (mg/L).

TT - Treatment Technique; a required process intended to reduce the level of a contaminant in drinking water.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Contaminant	Measure	Range of Detects	2007 Level	MCL	MCLG	Common Sources of Substance
Chloral Hydrate	ppb	0 to 2.6	2.6	Not regulated	0	By-product of drinking water disinfection
Bromoform	ppb	1 to 2.7	2.7	Not regulated	0	
Bromodichloromethane	ppb	2.9 to 24.8	24.8	Not regulated	0	By-product of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Chloroform	ppb	2.4 to 39.8	39.8	Not regulated	0	
Dibromochloromethane	ppb	2.5 to 12.1	12.1	Not regulated	60	
Dichloroacetic Acid	ppb	3.6 to 25.4	25.4	Not regulated	0	By-product of drinking water disinfection; not regulated individually; included in Haloacetic Acids
Trichloroacetic Acid	ppb	3.7 to 13.3	13.3	Not regulated	300	

Initial Distribution System Evaluation

This evaluation is a one-time study conducted by water systems to identify distribution system locations with high concentrations of the total trihalomethanes and haloacetic acids. EPA will use these results for future regulations. EPA requires the data be included in this report. The samples are not used for compliance. The table on the previous page includes the compliance sampling data for these two contaminants.

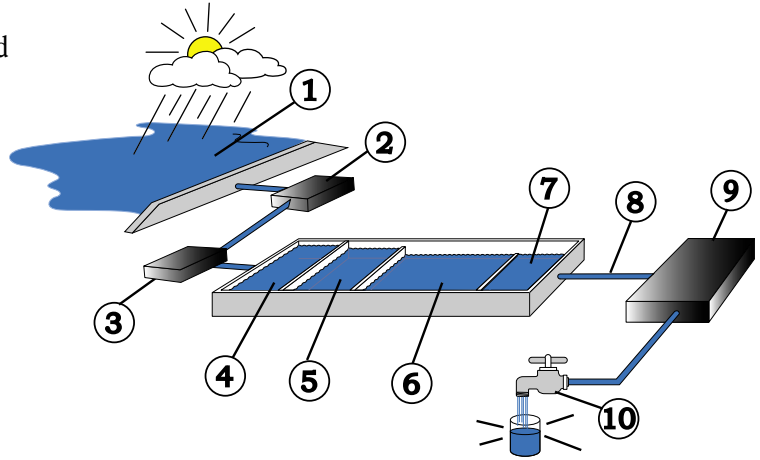
Contaminant	Measure	Average	Minimum Level	Maximum Level
Haloacetic Acids	ppb	6.69	0	42.7
Total Trihalomethanes	ppb	19.3	3.4	80



The Fort Worth Water Department Laboratory was the first municipal lab in Texas to earn this accreditation. It is accredited for water, wastewater and soils testing. Some of the testing for this report was performed by the city lab and other by state contract labs.

The Treatment Process

1. Reservoirs: Fort Worth water comes from six lakes.
2. Raw Water Pump Station: Here water is pumped from the lake to the water treatment plant.
3. Primary Disinfection: Either ozone or monochloramines (chlorine and ammonia) is added to kill bacteria and viruses. The Eagle Mountain and Rolling Hills water treatment plants use ozone. The North Holly and South Holly water treatment plants use monochloramines.
4. Mixing Chamber: Chemicals, called coagulants and polymers, are added to the water to cause small particles to adhere to each other.
5. Coagulation Basin: The particulate matter begins to clump together.
6. Sedimentation Basin: Particles settle to the bottom of the basin and are removed.
7. Filters: Water is filtered through four feet of coal, sand and gravel.
8. Disinfection: Chloramines are added to provide disinfection all the way to your faucet. The chlorine kills bacteria and viruses. Ammonia is added to reduce the chlorine odor and the amount of chlorine by-products created.
9. Clearwell Storage: Water is temporarily stored in tanks before it is pumped to the public.
10. Distribution: Drinking water reaches the public through more than 3,200 miles of pipeline.



State Agency Assessed Source Waters

The Texas Commission on Environmental Quality (TCEQ) conducted an assessment of Fort Worth's water supply lakes in 2003.

The Fort Worth water system is susceptible to some contaminants, using criteria developed by TCEQ in its federally approved source water assessment program.

The assessment report consists of maps showing the assessment area, an inventory of known land use activities of concern and documentation of specific contaminants of concern. This report is available for review at the Fort Worth Water Department office, 1000 Throckmorton St., 2nd floor.

Additional Parameters

This chart lists other items for which the water is tested. These items do not relate to public health but rather to the aesthetic effects. These items are often important to industrial users.

Item	Measure	2007 Level
Bicarbonate	ppm	79 to 115
Calcium	ppm	88 to 182
Chloride	ppm	18 to 38
Conductivity	µmhos/m	317 to 457
pH	units	8.1 to 8.3
Magnesium	ppm	3 to 10
Sodium	ppm	10 to 29
Sulfate	ppm	27 to 35
Total Alkalinity as CaCO ₃	ppm	79 to 115
Total Dissolved Solids	ppm	184 to 242
Total Hardness as CaCO ₃	ppm	104 to 154
Total Hardness in Grains	grains/gallon	6 to 9

Substances Expected To Be in Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-

426-4791 or visiting the EPA Web site at www.epa.gov/safewater.

As water travels over the land or through the ground, it dissolves naturally occurring minerals and radioactive material. Water can also pick up substances resulting from animal waste or human activity.

To ensure tap water is safe to drink, EPA and the Texas Commission on Environmental Quality (TCEQ) have regulations limiting the amount of certain

contaminants in water provided by public systems.

The Food and Drug Administration (FDA) regulates limits for contaminants in bottled water. These limits must provide the same public health protection as tap water standards.

Contaminants may be found in drinking water that may cause taste, color or odor problems. These types of problems are not necessarily causes for health concerns.

Learn more about water by visiting these Web sites. Many of these sites offer resources for teachers and children.

Fort Worth Water

www.fortworthgov.org/water

Environmental Protection Agency

www.epa.gov

Texas Commission on Environmental Quality

www.tceq.state.tx.us

Texas Water Development Board

www.twdb.state.tx.us

American Water Works Association

www.awwa.org
www.drinktap.org

Water Environment Federation

www.wef.org

National Sanitation Foundation

www.nsf.org

Texas Water Conservation Association

www.twca.org

What You Should Know about Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Fort Worth water does not have elevated lead levels.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

The city of Fort Worth is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. The Water Department can do this testing for \$27.20 per faucet. Call 817-392-4477 to make the arrangements.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Follow These Tips to Save Water Outdoors

- Water only when the grass needs watering. Walk across your grass early in the morning. If your footprints remain, it needs water.
- Water deeply. This promotes deep roots and healthy grass. An inch of water will penetrate the soil four to six inches.
- For clay soils, turn off the sprinkler when runoff occurs. Wait 20 minutes for water to absorb into the ground. Dig a test hole to see how deeply it absorbed. Repeat these steps until the water penetrates six inches.
- Water slowly for better absorption.
- Never water on windy days.
- Mulch all plant beds two to three times a year with organic matter. This slows evaporation.
- Water newly planted flowers and shrubs separately and more often so their root systems can get established.
- Choose plants native or adapted to this region and soil conditions. Visit www.txsmartscape.com for more information.



www.epa.gov/watersense

Watering Nixed 10 to 6 All Year Long

Not watering during the hottest part of the day, between 10 a.m. and 6 p.m., is just a good water management practice. In Fort Worth, city ordinance now allows lawn and landscape irrigation only before 10 a.m. and after 6 p.m., all year round.

Make sure timers on automatic systems are reset to comply with the new rules.

Watering with a handheld hose, soaker hose or drip irrigation is allowed at any time.

Efficient water use is important all the time.

FREE Yard Smart Seminar
Saturday, September 13, 2008
8:30 a.m.
Fort Worth Botanic Garden
Lecture Hall

For more information, see your August bill insert or visit www.fortworthgov.org/water.